WHAT IS CLAIMED IS:

1. An inductive electric energy transmission circuit comprising:

an oscillating circuit;

a push-pull circuit comprising first and second switching transistors configured to alternate a flow of current through the oscillating circuit;

a control circuit comprising first and second control transistors configured to control the first and second switching transistors; and

a frequency generator configured to generate an output signal adapted to drive the control transistors.

2. The inductive electric energy transmission circuit according to claim 1, wherein the oscillating circuit is configured to oscillate at an oscillatory frequency substantially equal to a frequency of the output signal of the frequency generator.

3. The inductive electric energy transmission circuit according to claim 1, wherein the output signal of the frequency generator comprises a square-wave signal.

4. The inductive electric energy transmission circuit according to claim 1, wherein a control terminal of the first control transistor and a control terminal of the second control transistor are configured to receive the output signal from the frequency generator.

5. The inductive electric energy transmission circuit according to claim 4, wherein a control terminal of the first switching transistor is electrically connected to a first end of a resistor, and wherein a control terminal of the second switching transistor is electrically connected to a second end of the resistor.

6. The inductive electric energy transmission circuit according to claim 1, further comprising:

a first capacitor arranged electrically parallel to a main current path of the first control transistor, wherein a first end of the first capacitor is electrically connected to a first end of a resistor; and

a second capacitor arranged electrically parallel to a main current path of the second control transistor, wherein a first end of the second capacitor is electrically connected to the second end of the resistor.

8. The inductive electric energy transmission circuit according to claim 6, wherein the first capacitor, the resistor, and the second capacitor form a series connection,

the circuit further comprising a supply voltage source connected in parallel with the series connection.

9. The inductive electric energy transmission circuit according to claim 1, wherein a main current path of the first switching transistor and a main current path of the second switching transistor are arranged in a series connection, and wherein a supply voltage source is connected in parallel to the series connection.

10. The inductive electric energy transmission circuit according to claim 1, wherein the oscillating circuit comprises an inductive coil.

11. The inductive electric energy transmission circuit according to claim 10, wherein the inductive coil is a primary coil of a transformer, and wherein the primary coil is configured to supply electric energy to a secondary coil of the transformer.

12. The inductive electric energy transmission circuit according to claim 1, wherein one of the first control transistor and the second control transistor is an n-channel field effect transistor, and wherein the other one of the first control transistor and the second control transistor is a p-channel field effect transistor.

13. The inductive electric energy transmission circuit according to claim 1, wherein one of the first switching transistor and the second switching transistor is an n-channel field effect transistor, and wherein the other one of the first switching transistor and the second switching transistor is a p-channel field effect transistor.

14. The inductive electric energy transmission circuit according to claim 1, wherein the first control transistor and the second control transistor comprise bipolar transistors having opposite polarity.

15. The inductive electric energy transmission circuit according to claim 1, wherein the first switching transistor and the second switching transistor comprise bipolar transistors having opposite polarity.

16. A method of inductively transmitting electric energy, the method comprising:

providing a circuit arrangement including:

an oscillating circuit;

a push-pull circuit comprising first and second switching transistors configured to alternate a first current flow through the oscillating circuit;

a control circuit comprising first and second control transistors configured to control an antiphase switching of the first and second switching transistors; and

a frequency generator;

generating an output signal with the frequency generator; and

delivering the output signal to a control terminal of the first control transistor and a control terminal of the second control transistor, thereby driving the control circuit and controlling the direction of the first current flow through the oscillating circuit.

17. The method according to claim 16, wherein the oscillating circuit comprises a primary coil of a transformer.

18. The method according to claim 17, further comprising magnetically coupling the primary coil to a secondary coil, and inducing a second current flow through the secondary coil.

19. The method according to claim 18, further comprising connecting the secondary coil to a battery, and charging the battery with the second current flow from the secondary coil.

20. In combination, an electrical appliance and an associated charging station; wherein

the charging station comprises:

a circuit arrangement configured to inductively transmit electric energy, including:

an oscillating circuit comprising:

a primary coil of a two-part transformer;

a push-pull circuit comprising first and second switching transistors configured to alternate a flow of current through the oscillating circuit;

a control circuit comprising first and second control transistors configured to control the first and second switching transistors; and

a frequency generator configured to generate an output signal adapted to drive the control transistors; and

wherein the electric appliance comprises:

a secondary coil of the two-part transformer configured to magnetically couple to the primary coil for transmitting electric energy from the primary coil to the secondary coil.

21. The combination according to claim 20, wherein the electric appliance further comprises a battery electrically connected to the secondary coil.

22. The combination according to claim 20, wherein the electric appliance is an electric toothbrush.

23. The combination according to claim 20, wherein the electric appliance is an electric shaver.